

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (original): A reliability evaluation test apparatus which tests a reliability of a semiconductor wafer on the basis of a test signal from a measurement unit, comprising a measurement section and a storage section which has a hermetic and heat insulating structure, stores a semiconductor wafer that is totally in electrical contact with a contactor, and transmits/receives a test signal to/from the measurement section, comprising:

a pressure mechanism which presses the contactor in the storage section; and

a heating mechanism which heats the semiconductor wafer that is totally brought into contact with the contactor by the pressure mechanism to a predetermined temperature,

wherein the reliability evaluation test apparatus evaluates reliability of a multilayered interconnection and an insulating film, which are formed on the semiconductor wafer, under an accelerated condition.

Claim 2 (original): A reliability evaluation test apparatus according to claim 1, wherein the storage section has a table which has a heat insulating structure and on which the semiconductor wafer is placed, a connection ring which surrounds the table and comes into electrical contact with the contactor, and a wiring board which comes into electrical contact with the connection ring and transmits/receives the test signal to/from the measurement section.

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Claim 3 (original): A reliability evaluation test apparatus according to claim 2, further comprising, on the connection ring, a seal member which comes into contact with the

contactor to seal a space in the storage section from an outside, and means for supplying an inert gas and/or reducing gas into the storage section.

Claim 4 (original): A reliability evaluation test apparatus according to claim 1, wherein the pressure mechanism comprises a pressure plate which presses the contactor, a bellows whose lower end is connected to the pressure plate, a support which is connected to an upper end of the bellows and can move vertically, and means for supplying a gas into a space formed by the pressure plate, the bellows, and the support.

Claim 5 (original): A reliability evaluation test apparatus according to claim 1, wherein the heating mechanism comprises a heater which uniformly heats an entire surface of the semiconductor wafer from a lower surface side and also serves as the table.

Claim 6 (original): A reliability evaluation test apparatus according to claim 5, wherein the heater comprises a first heater which heats a central portion of the semiconductor wafer, and a second heater which surrounds the first heater and heats an outer edge portion of the semiconductor wafer.

Claim 7 (original): A reliability evaluation test apparatus according to claim 5, wherein the heating mechanism comprises an auxiliary heater which heats the entire surface of the semiconductor wafer from an upper surface side.

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Claim 8 (original): A reliability evaluation test apparatus according to claim 1, wherein the measurement section comprises an electromigration measurement section and a leakage current measurement section.

Claim 9 (original): A reliability evaluation test apparatus according to claim 8, further comprises a switching mechanism which alternately switches between the measurement sections.

Claim 10 (original): A reliability evaluation test apparatus according to claim 8, wherein the electromigration measurement section comprises a function of supplying three kinds of currents including a DC current, a pulse DC current, and an AC current.

Claim 11 (currently amended): A reliability evaluation test apparatus according to claim 1, in which a plurality of test patterns [[77]] are formed on the semiconductor wafer, and which comprises a test pattern grouping function of putting the plurality of test patterns into groups and executing a reliability evaluation test for not less than five groups simultaneously.

Claim 12 (original): A reliability evaluation test apparatus according to claim 1, further comprising an anisotropic conductive film between the contactor and the semiconductor wafer.

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Claim 13 (original): A reliability evaluation test apparatus according to claim 1, wherein the measurement section simultaneously executes a reliability evaluation test of not less than 100 semiconductor devices formed on the semiconductor wafer.

Claim 14 (original): A reliability evaluation test apparatus according to claim 1, wherein the storage section comprises a heat insulating structure which maintains the semiconductor wafer at a temperature of not less than 160°C.

Claim 15 (original): A reliability evaluation test apparatus according to claim 1, wherein the contactor includes a heat-resistant substrate, and a thermal expansion coefficient of the heat-resistant substrate is 1 to 50 ppm/°C.

Claim 16 (original): A reliability evaluation test system comprising: an aligner which totally brings a contactor into contact with a semiconductor wafer; a transfer tool which transfers the contactor and the semiconductor wafer, which are totally kept in contact with each other by the aligner; and a reliability evaluation test apparatus of claim 1, which executes a reliability evaluation test of the semiconductor wafer transferred by the transfer tool.

Claim 17 (original): A reliability evaluation test system according to claim 16, which allows data communication between the aligner and the reliability evaluation test apparatus.

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Claim 18 (original): A reliability evaluation test system according to claim 16, wherein the aligner includes a microscope to observe the semiconductor wafer on the basis of a test result of the semiconductor wafer.

Claim 19 (original): A reliability evaluation test system according to claim 16, wherein the transfer tool includes a magnet to integrate the contactor and the semiconductor wafer.

Claim 20 (original): A reliability evaluation test system according to claim 16, wherein the transfer tool includes a magnetic circuit and switch means for turning on/off the magnetic circuit, and the switch means excites/degausses the magnetic circuit to cause the transfer tool to attract/release the contactor and the semiconductor wafer.

Claims 21-31 (canceled)

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